

AMENDMENTS TO THE CLAIMS:

Complete Listing of Claims

Claims 1-10 (canceled)

1 Claim 11. (currently amended) An apparatus for transceiving a data signal
2 compliant with HomePNA 10M8 technology in an Open System Interconnect
3 network, said apparatus comprising:

4 a transmitter having an input for coupling to a media access control device
5 for receiving a data signal to be transmitted and operably configured to convert
6 said data signal to an encoded signal, said transmitter further operably
7 configured to filter and digitally modulate said encoded signal compliant with
8 HomePNA mask requirements and output said filtered and digitally modulated
9 signal to a first analog front-end device for transmission to a shared medium;

10 a receiver having an input for coupling to a second analog front-end
11 device for receiving a HomePNA data signal from said shared medium and
12 operably configured to digitally demodulate, filter and decode a pay-load portion
13 of said HomePNA data signal;

14 wherein said second analog front-end device having an input for coupling
15 to said shared medium and operably configured to sample and filter said
16 HomePNA data signal, and having an output for coupling to said receiver for
17 outputting a pass-band signal responsive to said received HomePNA data signa;

18 wherein said receiver further includes

19 a digital demodulator having an input for receiving said pass-band
20 signal and operably configured to down-convert said pass-band signal to a
21 base-band signal,

22 a raised-cosine filter having an input for coupling to an output of
23 said digital demodulator for receiving said base-band signal, and operably
24 configured to filter down-converted noise from said base-band signal, and

25 The apparatus of Claim 10, wherein said receiver further includes
26 an equalizer having an input for receiving said filtered base-band
27 signal from an output of said real, low-pass filter and operably configured
28 to reduce inter-symbol interference, said equalizer operates at a first and
29 second rate, wherein said operating rate is defined in preamble portion of
30 said HomePNA data signal.

1 2
1 Claim 12. (original) The apparatus of Claim 11, wherein said equalizer is
2 operably configured to trained reception for a payload portion of said HomePNA
3 data signal.

1 3
1 Claim 13. (currently amended) A method of transceiving a data signal in a
2 HomePNA 10M8 compliant Open System Interconnect network, said method
3 apparatus comprising the steps of:

4 in a transmitter path:

5 receiving a data bit stream for transmission from an associated
6 media access controller (MAC);

7 encoding said data bit stream into a symbol signal based on said
8 data bit stream at a first or second symbol rate, wherein said symbol rate
9 is defined in a preamble portion of said data bit stream;

10 filtering said symbol signal to a resultant first base-band signal;

11 digitally modulating said base-band signal to a resultant first pass-
12 band signal centered at approximately 7 MHz;

13 filtering a notch into said first pass-band signal centered at
14 approximately 7 MHz; and

15 sending said first pass-band signal centered and notched at
16 approximately 7 MHz to an analog front end device for transmission to a
17 shared medium; and

18 in a receiver path:
19 receiving a HomePNA data signal from said shared medium;
20 sampling and filtering said HomePNA data signal to a second pass-
21 band signal responsive to said received HomePNA data signal;
22 digitally demodulating said second pass-band signal to a down-
23 converted second base-band signal responsive to said received second
24 pass-band signal;
25 filtering said second base-band signal using a low-pass filtering
26 arrangement, wherein down-converted noise is separated from said
27 second base-band signal;
28 canceling channel inter-symbol interference from said second
29 base-band signal using a dual equalizer arrangement;
30 decoding said second base-band signal subsequent to said noise
31 filtering and said channel inter-symbol interference canceling to a
32 representative bit stream.

4 3
1 Claim 14. (original) The method of Claim 13, wherein said analog front end
2 device further filters said first pass-band signal to comply with HomePNA mask
3 requirements about a 2 MHz frequency region.

5 3
1 Claim 15. (original) The method of Claim 13, wherein said received HomePNA
2 data signal is converted from an analog signal to a digital signal for further
3 processing in said receiver path.

6 3
1 Claim 16. (original) The method of Claim 13, wherein said transmitter path and
2 said receiver path are integrated in an application specific circuit.

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1 Claim 17. (original) The method of Claim 13, wherein said dual equalizer
2 arrangement operates to receive a payload portion of said HomePNA data signal
3 at a first and second rate.

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1 Claim 18. (original) The method of Claim 17, wherein said first rate and said
2 second rate comprise 2 Mbaud and 4 Mbaud, respectively, wherein said
3 operating rate is defined in a pay-load encoding field of said received HomePNA
4 data signal.

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1 Claim 19. (original) The method of Claim 17, wherein equalizers of said dual
2 equalizer arrangement are trained to receive a pay-load portion of said
3 HomePNA data signal at said first or said second operating rate prior to receiving
4 said pay-load portion, wherein each equalizer can operate at said first or said
5 second operating rate.

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1 Claim 20. (original) The method of Claim 13 further including determining a
2 cross correlation function of said received HomePNA data signal and a
3 predetermined training symbol.

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1 Claim 21. (original) The method of Claim 13 further including, in said receiver
2 path, canceling an echo signal associated with a transmitted signal from said
3 transmitter path.

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1 Claim 22. (original) The method of Claim 13 further including, in said receiver
2 path, detecting a collision between a transmitted signal associated with said
3 transmitter path and other transmitted signals on said shared medium.

13 12
1 Claim 20. (original) The method of Claim 22, wherein said collision detection
2 further includes comparing a determined echo signal and said other transmitted
3 signals on said shared medium.